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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/964,450	09/28/2001	Yukinobu Sugiyama	046124-5071	1685

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MORGAN LEWIS & BOCKIUS LLP
1111 PENNSYLVANIA AVENUE NW
WASHINGTON, DC 20004

EXAMINER

LEE, CHEUKFAN

ART UNIT	PAPER NUMBER
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2622

DATE MAILED: 04/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/964,450

Applicant(s)

SUGIYAMA ET AL.

Examiner

Cheukfan Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 September 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 is/are rejected.
- 7) ☒ Claim(s) 2 and 3 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 September 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>9/28/01; 8/27/02</u> | 6) <input type="checkbox"/> Other: _____ |

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1. Claims 1-3 are pending. Claim 1 is independent.
2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art and European Patent WO 98/14002, cited by Applicant on the Form PTO-1449 submitted with the Information Disclosure Statement (IDS) filed August 27, 2002. A copy of English translated patent is also filed with the patent.

Applicant's admitted prior art image sensing apparatus discussed on page 1, lines 11-26 comprises a plurality of photodetectors, an integrator arranged with a corresponding one of the photodetectors, the integrator for integrating charges output from the corresponding photodetector and outputting a voltage corresponding to the integrated charge amounts, a switch (output switch) for connecting the corresponding integrator to an external output line. A controller for controlling the components of the apparatus is also inherent.

The plurality of photodetectors of Applicant's prior art corresponds to the claimed plurality of photodetectors, the integrators correspond to the claimed integrators, and the output switches correspond to the claimed output switches.

Applicant's prior art does not include the claimed "first switch series-inserted between each photodetector and each integrator" and "controller for closing said first switch when an absolute value of an output voltage from said integrator is lower than a predetermined reference voltage, and opening said first switch when the absolute value of the output voltage from said integrator is not lower than the predetermined reference voltage". However, use of such switches and control of the switches are taught by WO 98/14002.

WO 98/14002 discloses an image sensing apparatus (Fig. 1 and English translated version) having an arrangement of light converting pixels (a plurality of photodetectors) (English translated version, page 6, lines 13-16), only one of which is shown in Fig. 1 for the purpose of explanation of the sensing apparatus (pages 12 and 13), resettable integrators (05 and 21) (reset with reset signal 20) arranged for the respective photodetectors, a first switch (04) series-inserted between the corresponding photodetector and corresponding integrator, a comparator (07) for comparing the output voltage (06) of the integrator (05 and 21) with a comparative voltage (08) (reference voltage), which inherently predetermined, and a control output (10) (pages 12 and 13).

To prevent saturation of the pixels, if the output voltage (06) from the integrator (05 and 21) has exceeded the reference voltage (08), the controller (10) switches the switch (04) off and thus ends the integration period for the current integration phase, which inherently means that the controller (10) closes the switch (04) when the value of

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the output voltage (06) from the integrator is lower than the reference voltage (08), and opens switch (04) when the value exceeds the reference voltage (08).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to Applicant's prior art with the teaching of WO 98/14002 in order to avoid overexposure and prevent saturation of the pixels as suggested by WO 98/14002 (Abstract, English translated version).

4. Claims 2 and 3 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. The following is an examiner's statement of reasons for allowance:

Claim 2 is allowable because WO 98/14002 does not disclose a second switch and control of the second switch as claimed. Specifically, WO 98/14002 does not disclose a second switch for connecting each photodetector and an overflow drain for removing charges output from the photodetector, and that the **controller opens the second switch** when the value of the output voltage from the integrator is lower than the reference voltage, and **closes the second switch** when the value of the output voltage from the integrator is not lower than the reference voltage as claimed.

Claim 3 is allowable because WO 98/14002 does not disclose a third switch series inserted between each integrator and each output switch (of claim 1), a fourth

switch for connecting a terminal of the output switch on the integrator side and a supply source for supplying the reference voltage, and that the **controller closes the third switch and opens the fourth switch** when the value of the output voltage from the integrator is lower than the reference, and **opens the third switch and closes the fourth switch** when the value of the output voltage from the integrator is not lower than the reference voltage as claimed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Mizuno (U.S. Patent No. 6,606,123) discloses a photosensitive device which is never saturated even when the intensity of incident light is large (Fig. 1, col. 8, line 32 – col. 10, line 13).

Mizuno et al. (U.S. Patent No. 6,642,501) discloses a photo-detecting apparatus.

Mizuno (U.S. Patent No. 5,424,530) discloses a solid image pickup device having dual integrator.

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7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cheukfan Lee whose telephone number is (703) 305-4867. The examiner can normally be reached on 9:30 a.m. to 6:00 p.m., Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward L. Coles can be reached on (703) 305-4712. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Cheukfan Lee
March 20, 2005



Cheukfan Lee